REMARKS

Clarification of Record.

Applicants appreciate the Examiner's acknowledgment of the Information Disclosure Statement filed on March 18, 2002 and receipt of the initialed copy of Form PTO-1449. Applicants note that under the caption "OTHER ART", there are six references cited; however, the Examiner's initials appear only three times. It is Applicants understanding that the Examiner considered each of the six references cited. However, in order to avoid any possible future misunderstanding of the record, Applicants request the Examiner to provide another copy of an appropriately initialed copy of Form PTO-1449 clearly indicating consideration of each of the references cited, including each of the six publications cited under "OTHER ART".

Claims 1 through 19 were rejected under 35 U.S.C. § 103 for obviousness predicated upon EP0897124A1 (EP'124) and WO 95/220068 (WO'068).

In the statement of the rejection the Examiner asserted that EP'124 discloses a filter which includes a long-grating having a first grating section and a second grating section spaced apart from the first section by a phase gap. The Examiner admitted that EP'124 does not disclose the concept of irradiating the core between the gratings with UV light as in the present invention. The Examiner, however, concluded that one having ordinary skill in the art would have been motivated to irradiate the core of the optical filter disclosed by EP'124 for the same reason disclosed by WO'068. This rejection is traversed.

Applicants submit that the Examiner's rejection is predicated upon an apparent misunderstanding of the teachings of WO'068, because WO'068 does **not**, repeat **not**, relate

to a **long-period grating filter** as, the Examiner appreciates, is disclosed by EP'124 and as in the present invention. Applicants submit that WO'068 relates to a filter with a **short-period gratings**, and would have been so understood by one having ordinary skill in the art. A factual basis for this conclusion follows.

The Examiner's attention is invited to page 3 of WO'068, line 37 to page 4, line 6, wherein it is disclosed that:

> When the concomitant region of the device is located between the ends of the previously created uniform grating structure, two gratings will effectively be produced which are out of phase with one another and which act as **a wavelength selective Fabry-Perot resonator which allows light at resonance** to penetrate the stop-band of the original (uniform) grating. (Emphasis supplied).

> On page 6 of WO'068, line 36 through page 7, line 2, it is disclosed that:
> The prism interferometer produces a fringe pattern on this local line and adjustment of the prism angle is effected to select the appropriate **Bragg wavelength**, this typically being in the order of 1550 nm. (Emphasis supplied).

> On page 7 of WO'068, lines 16 through 19 it is disclosed that:
> The fringe pattern then imprints a grating structure into the fiber core and this is monitored using a broadband source 21 **at the Bragg wavelength** selected for the grating on a spectrum analyzer 22. (Emphasis supplied).

> On page 8 of WO'068, lines 13 through 16, it is disclosed that:
> **A transmission peak at 1548.7 nm appears in the centre of the reflection band** corresponding to the formation **of a Fabry-Perot-like resonator structure**. (Emphasis supplied).

> On page 8 of WO'068, lines 24 through 31, it is disclosed that:
> As illustrated in Figure 5, a phase mask 23 is arranged to diffract UV light at 240 nm, mostly in the +1 and -1 orders of diffraction, and it comprises a silica mask having 1 mm long parallel grooves 24 which are spaced apart with a period of 1.06 μm, assuming that the uniform grating is to have **an axial period P of 530 μm** to produce **a Bragg reflection peak centred on λ_B of 1.535 μm**. (Emphasis supplied).

Based upon the above excerpts of WO'068, it is apparent that one having ordinary skill in the art would have understood that the disclosed filter has **short-gratings**. Although on page 8 of WO'068, as above mentioned, it is disclosed that "the uniform grating is to have an axial period P of 530 μm", that grating period P of 530 μm is absolutely wrong, and one having ordinary skill in the art would have recognized it is wrong, since such a period cannot possibly be realized, as evidenced by upon the calculations below.

The Bragg wavelength λ_B can be expressed by the following equation:

$$\lambda_B = 2*n*\Lambda$$

In the above equation n is a refractive index of an optical fiber, and Λ is a grating period. Since a refractive index of an optical fiber is usually 1.45, the Bragg wavelength λ_B becomes **1537 μm** if the grating period Λ is 530 μm. The wavelength of 1537 μm does not coincide with the explanation in the specification and Figs. 4 and 7. Accordingly, and one having ordinary skill in the art would so have understood, the grating period Λ must be 530 nm and not 530 μm. This is how one having ordinary skill in the art would have interpreted WO'068. *In re Yale, 434 F.2d 666, 168 USPQ 46 (CCPA 1970).*

In contradistinction to WO'068, the present invention is directed to a filter with **long-period gratings**. There are art-recognized differences between filters with long-period gratings on the one hand and filters with short-period gratings on the other hand. In this respect, Applicants would invite the Examiner's attention to U.S. Patent No. 5,703,978 which issued to DiGiovanni et al., a copy of which is appended hereto as Exhibit A for the Examiner's convenience. It should be apparent from column 1 of DiGiovanni et al., lines 13 through 47, for example, that there are art-recognized distinctions between filters with long-period gratings and filters with short-period gratings. This being the case, one having

ordinary skill in the art would not have arbitrarily extracted teachings applicable to a filter with short-period gratings, as disclosed by WO'068, and impress them in the method and filter disclosed by EP'124.

In short, there is no apparent factual basis upon which to predicate the conclusion that one having ordinary skill in the art would have been realistically motivated to modify the filter with the long-period gratings disclosed by EP'124 in the proposed manner, merely because WO'068 discloses the irradiation of the core of an optical fiber of a filter with short-period gratings. *Teleflex Inc. v. Ficosa North America Corp., 299 F.3d 1313, 63 USPQ2d 1374; In re Lee, 237 F.3d 1338, 61 USPQ2d 1430 (Fed. Cir. 2002).* On the other hand, Applicants have introduced evidence (Exhibit A) to show that filters with short-period gratings have achieved a separate status in the art vis-à-vis filters with long-period gratings. Accordingly, Applicants submit that one having ordinary skill in the art would not have been realistically motivated to modify the method and fiber disclosed by EP'124 by irradiating with UV light as claimed, merely because WO'068 discloses irradiation of a core of an optical fiber between gratings of a filter with short-period gratings. Applicants, therefore, submit that the requisite fact-based motivation has not been established.

Based upon the foregoing, Applicants submit that the imposed rejection of claims 1 through 19 under 35 U.S.C. § 103 for obviousness predicated upon EP'124 in view of WO'068 is not factually or legally viable and, hence, solicit withdrawal thereof.